

WHAT IS CLAIMED IS:

1. A spiral conveyor for a concrete extrusion machine, the conveyor comprising:

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a first spiral conveyor section having a first length and a first external diameter;

a second spiral conveyor section which is straight and has a second external diameter, which is greater than the first external diameter, and a second length, the first section being spaced apart from the second section; and

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a tapered third spiral conveyor section between the first section and the second section, having a third length, a first end adjacent to the first section and a second end adjacent to the second section.

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2. A spiral conveyor as claimed in claim 1, wherein the first section is straight, the first end of the third section having the first external diameter and the second end of the third section having the second external diameter.

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3. A spiral conveyor as claimed in claim 2, including means for mounting the spiral conveyor in the extrusion machine.

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4. A spiral conveyor as claimed in claim 3, wherein the first section has flights of the first diameter, which is constant along the first length, and the second section has flights of the second diameter, which is constant along the second the length and which is greater than the first diameter.

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5. A spiral conveyor as claimed in claim 4, wherein the conveyor has a hollow shaft adjacent to the second end of the third spiral conveyor section, the second spiral conveyor section being removably mounted on to the shaft.

6. A spiral conveyor as claimed in claim 5, wherein the second spiral conveyor section has two longitudinally divided components, each said component having a longitudinal recess receiving part of the hollow shaft, whereby the shaft is received between the two components.

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7. A spiral conveyor as claimed in claim 6, including removable connectors which connect the two components together.

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8. A spiral conveyor as claimed in claim 5, including a locking device between the second spiral conveyor section and the hollow shaft, whereby the second section is non-rotatable about the shaft.

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9. A spiral conveyor as claimed in claim 8, wherein the locking device includes a key and a keyway.

10. A spiral conveyor as claimed in claim 7, wherein the connectors are spaced apart radially outwards from the recesses.

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11. A spiral conveyor as claimed in claim 10, wherein each component of the second spiral conveyor section has an aperture to each side of the recesses and spaced-apart therefrom, the apertures of the components being aligned, the connectors extending through the apertures of the two components.

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12. A spiral conveyor as claimed in claim 11, wherein the connectors include bolts extending through the apertures.

13. A spiral conveyor as claimed in claim 12, wherein the bolts are spaced apart from the hollow shaft.

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14. A spiral conveyor for a concrete extrusion machine, the conveyor comprising:

a first spiral conveyor section;

an extension operatively connected to the first section; and

5 a second spiral conveyor section mounted on the extension, the second section comprising two longitudinally divided components, each said component having a semi-cylindrical recess therein, at least one connector interconnecting the two components, said at least one connector engaging both components, and a locking device being between the extension and the second section.

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15. A spiral conveyor as claimed in claim 14, wherein the locking device includes a key and a keyway.

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16. A spiral conveyor as claimed in claim 15, wherein the two components are symmetrical halves of the second section, each having a pair of apertures to each side of the recesses, said at least one connector including two bolts extending between corresponding apertures of the two halves.

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17. A spiral conveyor as claimed in claim 16, wherein the bolts are spaced apart from the first section.

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18. A spiral conveyor as claimed in claim 17, wherein the bolts are parallel.

19. A traveling extrusion machine for forming hollow core concrete sections, the machine comprising:

a frame;

a feed chamber mounted on the frame for receiving premixed concrete;

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a molding chamber adjacent to the feed chamber;

5 a mandrel in the molding chamber;

10 a vibrator mounted adjacent to the molding chamber; and

15 a rotatable spiral conveyor extending from the feed chamber to the molding chamber, the conveyor having a hollow shaft adjacent to the mandrel and a section of the spiral conveyor releasably connected to the hollow shaft, the section of the conveyor including two components on opposite sides of the hollow shaft, a non - rotation locking device between the components and the hollow shaft and at least one connector interconnecting the two halves, said at least one connector engaging both components.

20. 20. An extrusion machine as claimed in claim 19, wherein the locking device is a key and a keyway, the components of the section having corresponding apertures on opposite sides of the shaft, said at least one connector being two bolts extending between the apertures, the shaft being between the bolts.

25 21. 21. A traveling extrusion machine for forming hollow core concrete sections, the machine comprising:

20 a frame;

25 a feed chamber mounted on the frame for receiving premixed concrete;

30 a molding chamber spaced apart from the feed chamber;

35 a mandrel in the molding chamber;

40 a vibrator mounted adjacent to the molding chamber; and

a rotatable spiral conveyor extending from the feed chamber to the molding chamber, the conveyor having a first section within the feed chamber having flights with a first constant external diameter, a second section adjacent to the molding chamber having flights with a second constant external diameter, which is greater than the first diameter, extending along a portion of the conveyor, and a third section between the first section and the second section having flights which taper from the first diameter to the second diameter.

5 22. An extrusion machine as claimed in claim 21, wherein the second section of the spiral conveyor has a plurality of flights.

10 23. An extrusion machine as claimed in claim 21, wherein the second section is in two longitudinally divided components, the components being connected to each other by connectors which are spaced-apart from the third section of the conveyor.

15 24. An extension machine as claimed in claim 21, wherein the spiral conveyor has an axis of rotation, flights of the first section having leading and trailing edges which are sloped relative to the axis of rotation, the flights of the second section having leading edges which are perpendicular to the axis of rotation.

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